
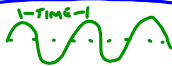




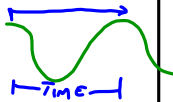

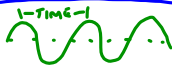



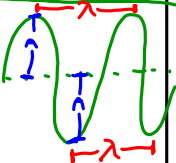
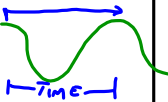

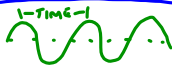



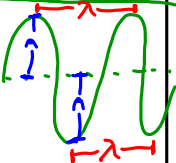
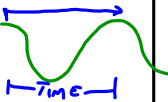


Jan 4-7:20 AM

Concept	Meaning	Symbol	Units	Picture
FREQUENCY	HOW MANY PER UNIT OF TIME $\text{FREQ} = \frac{\#}{\text{TIME}}$	f $f = \frac{1}{T}$	hertz $\text{Hz} = \frac{1}{\text{sec}}$	
PERIOD	HOW MUCH TIME FOR ONE. $\text{PERIOD} = \frac{\text{TIME}}{\#}$	T $T = \frac{1}{f}$	seconds sec.	
TRANSVERSE:	WHEN THE MEDIUM VIBRATES <u>ACROSS</u> THE <u>DIRECTION</u> THE WAVE TRAVELS.			
LONGITUDINAL:	WHEN THE MEDIUM VIBRATES <u>ALONG</u> THE <u>DIRECTION</u> THE WAVE TRAVELS.			
AMPLITUDE	HOW FAR FROM THE MIDDLE.	A	meters m	
WAVELENGTH	HOW FAR FOR ONE "BACK & FORTH"	λ	meters m	
WAVE SPEED	$\frac{\text{DISTANCE OF A WAVE}}{\text{TIME OF A WAVE}}$	v	$\frac{\text{meters}}{\text{second}}$ m/s	

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TRANSVERSE:	WHEN THE MEDIUM VIBRATES <u>ACROSS</u> THE <u>DIRECTION</u> ON THE WAVE TRAVELS.			
LONGITUDINAL:	WHEN THE MEDIUM VIBRATES <u>ALONG</u> THE <u>DIRECTION</u> THE WAVE TRAVELS.			
AMPLITUDE	HOW FAR FROM THE MIDDLE.	A	meters m	
WAVELENGTH	HOW FAR FOR ONE "BACK & FORTH"	λ	meters m	
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Feb 18-6:50 AM

Welcome!!!

H. Leslie Grebe

- * Pick up:
 - worksheet
 - slip of paper (for later)



Centering

Opening Question:

What does "natural frequency" have to do with a kid on a swing?

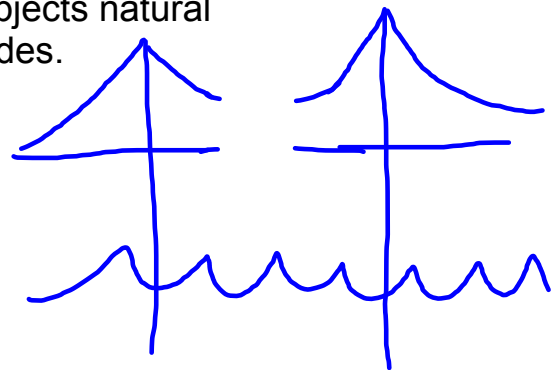
Sep 7-7:04 AM

Tuning forks...

Resonance: What is it???

When something matches an objects natural frequency causing large amplitudes.

"Well-timed forces create large waves"



Demos:

- Kids learning to swing
- Tuning forks <http://www.youtube.com/watch?v=hiHOqMOJTH4>
- Jumping on bridge <http://www.youtube.com/watch?v=uWoiMMLlvco>
- Air track <http://www.youtube.com/watch?v=wASkwB8DJpo>
- MB: Breaking glass http://www.youtube.com/watch?v=PMg_nd-O688
- Tacoma Narrows Bridge <http://www.youtube.com/watch?v=j-zczJXSxnw>

Apr 21-7:45 AM

CANNONBALLS/
DIVING

WAVE POOLS

BRAINSTORM:

What are other examples of resonance?

"Well-timed forces cause large amplitude"

TRAMPOLINE

DRIBBLING

DIVING BOARD

YO-YO

Apr 21-7:45 AM

Daily 3 Questions

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

CP hmwk: What happens if you only pump your legs half the times? What if you do it twice per swing? Explain.

Your can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1) An object resonates when energy is added at its
NATURAL frequency

2) What adds resonance energy to a kid on a swing?

LEGS PUMPING

SOMEONE PUSHING

3) Besides swinging, what is one other example of resonance?

Apr 25-7:25 AM